Medical Patient Care Guidelines

Medical Patient Care Guidelines

These guidelines were created to provide direction to each level of certified provider in caring for medical patients. All of these directions, dosages and provisions are subject to change with a later notice or revision of the guidelines. The OMLC physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OMLC physician these should be documented and brought to the attention of the physician at the receiving hospital. If the explanation is not sufficient to the provider then they may bring the issue to the UCEMS committee for review.

General Approach to Medical Patient Care Guidelines

- Assess your patient prior to initiating a guideline
- More than one guideline may apply
- When conflicts arise between treatment guidelines contact OLMC for clarification
- Providers may provide treatment up to the level of their certification only
- Air Medical Transport Service personnel function under their own clinical guidelines
- Contact your receiving hospitals and OLMC as soon as clinically possible for each patient
- Do not delay transport to attempt to complete all possible treatments in a guideline
- Getting to a facility with a higher level of care should always be a priority
- OLMC with a physician may change your treatment plan
- Any variations to a guideline by the OLMC or physician should be clarified to insure that the provider has properly characterized the situation
- The On-Line Medical Control Physician has the final word on treatment once contact is made

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Key to Symbols used in Guidelines

 This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

ALLERGIC REACTION/ANAPHYLAXIS

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - Safely and rapidly eliminate the source of exposure as required
- ❑ Focused history and physical exam
- ❑ Monitor vital signs, cardiac rhythm, oxygen saturations (SaO_2), skin color and level of consciousness.
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Cold pack to bite or sting site as necessary
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ Give or assist patient with **Epipen (0.3 mg)** IM for severe respiratory distress and/or shock from anaphylaxis
- ❑ Assist patient with own Albuterol inhaler according to the prescription on the inhaler.
- ❑ O_2 as needed to maintain SaO_2 above 90%.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Albuterol 2.5-7.5 mg (2.5 mg increments)** via nebulization for bronchospasm/wheezing until symptoms subside.
  - Patient respiratory status must be reassessed after each 2.5 mg to determine need for additional dosing.
- ❑ **Epinephrine (1:1000) 0.3 mg** SQ/IM for patient in extremis or anaphylaxis
  - **May repeat every 10 minutes to max total of 1.2 mg**

PARAMEDIC

- ❑ **Diphenhydramine (Benadryl) 50 mg** IV (preferred) or IM for severe allergic reaction or anaphylaxis
- ❑ **Epinephrine (1:10,000) 0.5-1mg** IV for severe hypotension.

  May repeat every 5 min if shock persists.

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

  And/Or

- ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- ❑ Give or assist patient with **Epipen Jr. (0.15 mg)** IM for severe respiratory distress and/or shock from anaphylaxis
- ❑ Assist patient with own Albuterol inhaler according to the prescription on the inhaler.
- ❑ O_2 as needed to maintain SaO_2 above 90%.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Albuterol 2.5-7.5 mg (2.5 mg increments)** via nebulization for bronchospasm/wheezing until symptoms subside.
  - Patient respiratory status must be reassessed after each 2.5 mg to determine need for additional dosing.
- ❑ **Epinephrine (1:1000) 0 .01 mg/kg** SQ/IM for patient in extremis or anaphylaxis
  - **May repeat every 10 minutes to max total of 1.2 mg**

PARAMEDIC

- ❑ **Diphenhydramine (Benadryl) 1 mg/kg (max single dose of 50 mg)** IV (preferred) or IM for moderate to severe allergic reaction or anaphylaxis
- ❑ **Epinephrine (1:10,000) 0.01 mg/kg** IV for severe hypotension.

  May repeat every 5 min if shock persists.

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

  OR

- ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

ENVIRONMENTAL TEMPERATURE EMERGENCIES

ALL PROVIDERS

Heat Related

- ❑ Scene and patient management per Core Principles
  - Remove patient from environment, when possible
- ❑ Focused history and physical exam
  - Body temperature assessment
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Severe muscle cramps may be relieved by
    - Patient gently stretching the muscle
  - Temperature elevation/patient with no altered mental status
    - Slow cooling with ice packs, wet towels, and/or fans to areas in the vicinity of carotid, femoral, brachial arteries
      - If patient is alert and not nauseated, rehydration with water or balanced electrolyte solution
  - Temperature elevation/patient with altered mental status (heat stroke)
    - Aggressive cooling to unclothed patient utilizing fine mist water spray and fans in conjunction with ice packs to groin and axilla
    - Aggressive cooling should be stopped if shivering begins

Cold Related

- ❑ Scene and patient management per Core Principles
  - Protect patient from further heat loss (application of blankets, warm environment, etc.).
  - Suspicion of cardiac arrest in cold environment, utilize 30-45 seconds to confirm pulselessness.
  - In the absence of a confirmed temperature, provider should initiate standard resuscitative efforts as necessary.
- ❑ Focused history and physical exam
  - Body temperature assessment
  - Blood glucose assessment
  - Level of Consciousness - May apply altered mental status guideline if applicable.
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training.
  - Confirmation of body temperature <86 degrees F.
    - No active external rewarming (no heat, forced hot air, warm packs, etc.)
    - Limit defibrillation attempts to 3
  - Confirmation of body temperature 86-93 degrees F., warm packs to neck, armpits, and groin
  - Body temperature >93 degrees, warm with blankets, warm environment, etc.
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT	PEDIATRIC (<37 kg or 80 lbs)
EMT- BASIC PROVIDER	**EMT- BASIC PROVIDER**
EMT- INTERMEDIATE PROVIDER	**EMT- INTERMEDIATE PROVIDER**
❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle* • If available, use warmed fluids for hypothermic patients	❑ Same as adult
PARAMEDIC	**PARAMEDIC**
❑ Cold emergencies • Withhold antiarrhythmics until temperature >86 degrees F	❑ Same as adult

FEVER MANAGEMENT

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles especially the patient comfort principles.
- ❑ Focused history and physical exam
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
- ❑ Assess temperature. If temperature is >100.4 and the patient does not have any contraindications consider antipyretic medications.
- ❑ Contraindications include abdominal pain, allergy to medications, vomiting, active bleeding or concern from parents.

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Acetaminophen (Tylenol) 1000 mg by mouth
- ❑ Ibuprofen (Motrin) 800 mg by mouth

EMT - PARAMEDIC PROVIDER

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ **Acetaminophen (Tylenol) 10-15mg/kg by mouth or rectum** – Recognize that Acetaminophen comes in various concentrations:
  - Infant Drops is 100mg per 1.0cc
  - Children's Liquid is 160mg per 5.0cc
  - Chewable Tablets are 80mg or 160mg
  - Junior Strength caplets are 160mg
  - Rectal Suppositories come in 80mg, 120mg and 325mg and may be cut to an estimated dose.

- ❑ **Ibuprofen (Motrin) 10mg/kg by mouth** – Recognize that Ibuprofen comes in various concentrations:
  - Pediatric/Infant drops is 100mg per 2.5cc
  - Children's Liquid 100mg per 5.0cc
  - Chewable Tablets are 50mg or 100mg
  - Junior Strength Caplets are 100mg

EMT - PARAMEDIC PROVIDER

GLUCOSE ABNORMALITIES
HYPOGLYCEMIA/HYPERGLYCEMIA

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - **Oral glucose 7.5 grams (pediatric) to 15 grams (adult)** if patient is able to protect airway
    - Repeat in 15 minutes as appropriate
  - Hypoglycemic patient with altered mentation - insulin pump in place
    - Care is directed at treating hypoglycemia first, then stopping administration of insulin
    - Turn off insulin pump if able
    - If no one familiar with the device is available to assist, disconnect pump from patient by:
      - Using quick-release where tubing enters dressing on patient's skin

      -OR-

      - Completely removing the dressing, thereby removing the subcutaneous needle and catheter from under patient's skin
  - When mental status returns to normal, patient should be strongly encouraged to eat.

ADULT

EMT- BASIC PROVIDER

- Hypoglycemia is defined as blood glucose level <50 mg/dl with any degree of altered mentation
- Blood glucose assessment (heel stick is preferred in newborns or infants)

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Dextrose 50% 25 grams** IV titrate to effect for hypoglycemia. May repeat as necessary
- ❑ **Glucagon 1 mg** IM with no IV access
- ❑ **Normal Saline 1000 mL** IV over 30–60 minutes for hyperglycemic patient (BS >300 mg/dL) with signs of hypoperfusion and no evidence of pulmonary edema
- ❑ Follow Release at Scene guideline for Hypoglycemia as the situation applies

PARAMEDIC

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- Hypoglycemia is defined as blood glucose level <50 mg/dl with any degree of altered mentation
- Blood glucose assessment (heel stick is preferred in newborns or infants)

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid per *Resuscitation and Perfusion Core Principle*
- ❑ Newborn up to 3 kg
  - **Dextrose 10% 5 mL/kg** IV titrate to effect for hypoglycemia
  - *To mix: Add 1 mL Dextrose 50% to 4 mL of NS*
- ❑ Infants and children >3 kg to 37 kg
  - **Dextrose 25% 2 mL/kg** IV titrate to effect for hypoglycemia
  - *To Mix: Add 25 mL of Dextrose 50% to 25 mL NS*
- ❑ **Glucagon 0.1 mg/kg (max dose of 1 mg)** IM with no IV access
- ❑ **Normal Saline 20 mL/kg** IV over 30–60 minutes for hyperglycemic patient (BS >300 mg/dL) with signs of hypoperfusion and no evidence of pulmonary edema
- ❑ Follow Release at Scene guideline for Hypoglycemia as the situation applies

PARAMEDIC

HYPOTENSION / HYPOPERFUSION
(NON-TRAUMATIC)

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available
- ❑ Focused history and physical exam
  - Consider assessing for orthostatic changes
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Modified Trendelenburg position (with or without the torso raised) with appropriate precautions related to airway management and potential spinal cord injury.
  - Ensure patient warmth

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*

PARAMEDIC

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

And/Or

- ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult

PARAMEDIC

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

OR

- ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

NAUSEA / VOMITING

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
  - Blood glucose assessment
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Nothing by mouth
  - Upright or lateral recumbent positioning

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Promethazine (Phenergan) 12.5–25 mg** IV titrated to effect if SBP >100 or peripheral pulse present
  - *Dilute with 5–10 mL of NS and administer over 30 seconds*
  - **Promethazine (Phenergan) 25 mg** IM if no vascular access.
- ❑ **Ondansetron (Zofran) –** Give 4mg to 8mg IV/IM

PARAMEDIC

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult
- ❑ **Promethazine (Phenergan) 0.25 mg/kg (max dose of 12.5 mg)** IV for patients >2 years of age if SBP >70 + (age in years x 2) mmHg or peripheral pulses present
  - ***Dilute IV dose*** *with 3-5 mL of NS and administer over 30 seconds*
  - **IM Injection only when there is no vascular access.**
- ❑ **Ondansetron (Zofran**) 0.1mg/kg IV/IM to a Maximum of 4mg.

PARAMEDIC

OBSTETRICAL EMERGENCIES

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - Attempt to attain sanitary environment
- ❑ Focused history and physical exam
  - Do not perform pelvic exam
- ❑ 1st Trimester Bleeding
  - Consider Ectopic Pregnancy and Miscarriage
- ❑ 3rd Trimester Bleeding
  - Consider abruption or placenta previa,
- ❑ Imminent Deliveries - Develop and implement treatment plan based on assessment findings, resources, and training
  - Normal delivery procedures
  - Attempt to prevent explosive delivery
    - As delivery occurs, suction mouth, then nose
    - If membrane is still intact as head delivers
      - Instruct the mother to stop pushing
      - Gently tear open membrane and immediately suction mouth, then nose
    - Keep newborn warm and dry
    - Keep newborn at level of vagina until cord is cut
      - Place one clamp 6 inches away from baby, place second clamp 9 inches away from baby, cut cord between the clamps
    - Allow infant to nurse
      - In multiple births, do not allow babies to nurse until all have been delivered
    - APGAR score at 1 minute and again at 5 minutes
  - Special situations
    - Significant hemorrhage following delivery or delayed placenta delivery
      - Unless multiple birth is anticipated, begin fundal massage
      - Refer to Resuscitation and Perfusion Core Principle
      - Begin Oxytocin (Pitocin) as below
      - **Transport to the closest hospital**
    - Nuchal cord
      - Attempt to slip cord over the head
      - If cord is too tight to remove, immediately clamp in two places and cut between clamps
    - Prolapsed cord **or** limb presentation – DO NOT ATTEMPT DELIVERY
      - With maintaining a pulsatile cord as the objective, two fingers of gloved hand into vagina to raise presenting portion of newborn off the cord.
      - If possible, place mother in Trendelenburg position. Otherwise, knee-chest.
      - Keep cord moistened with sterile saline.
      - Continue to keep pressure off cord throughout transport
      - **Transport to the closest hospital**
    - Breech presentation
      - Position mother with her buttocks at edge of bed, legs flexed
      - Support body as it delivers
      - As the head passes the pubis, apply gentle upward pressure until the mouth appears over the perineum. Immediately suction mouth, then nose.
      - If head does not deliver, but newborn is attempting to breath, place gloved hand into the vagina, palm toward newborn's face, forming a "V" with the index and middle finger on either side of the nose. Push the vaginal wall from the face. Maintain position throughout transport.
    - Shoulder dystocia
      - Position mother with buttocks off the edge of the bed and thighs flexed upward as much as possible.
      - Apply firm, open hand pressure above the symphysis pubis
      - If delivery does not occur, maintain airway patency as best as possible, immediately transport
    - Stillborn/abortion
      - All products of conception should be carefully collected and transported with the mother to the hospital. Anything other than transport should be coordinated with on-line medical consultation and/or law enforcement.

ADULT	PEDIATRIC (<37 kg or 80 lbs)
EMT- BASIC PROVIDER	**EMT- BASIC PROVIDER**
EMT- INTERMEDIATE PROVIDER	**EMT- INTERMEDIATE PROVIDER**
❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle* ❑ Treat seizures as per guidelines.	
PARAMEDIC	**PARAMEDIC**
❑ **Oxytocin (Pitocin)** • **Intramuscular. Give 10 units IM.** ◑ **IV Infusion may be started if bleeding continues by adding 40 units to 1000cc NS** and titrating the infusion to decrease bleeding and patient comfort. ❑ In the event of uterine inversion, make one attempt to put the uterus back into place. Using the palm of the hand, push the fundus of the inverted uterus toward the vagina. If unsuccessful, cover uterus with moistened sterile gauze.	

OPTIONAL ORDERS BY MEDICAL CONSULTATION ONLY

◑ ***High-risk preterm labor when delivery is imminent:*** (1) Rapidly infuse 1 liter of NS, (2**) Albuterol 2.5 mg** via nebulization

OBSTRUCTIVE or REACTIVE AIRWAY DISEASE

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam:
  - Determine whether the patient has sensitivity to peanuts and/or soy
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ Assist with administration of prescribed metered dose inhaler or nebulized medication per dosing instructions if responder nebulized medication is unavailable. If MDI dosing instructions are not available, give second dose at 20 minutes if needed.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Albuterol 2.5-7.5 mg (2.5 mg increments)** via nebulization for bronchospasm/wheezing until symptoms subside.
  - Patient respiratory status must be reassessed after each 2.5 mg to determine need for additional dosing.
- ❑ **Epinephrine (1:1000) 0.3 mg** SQ/IM for patient in extremis
  - **May repeat every 10 minutes to max total of 1.2 mg**

PARAMEDIC

- ❑ **Lidocaine 2% 40-60 mg (2–3 mL) added to Albuterol** for adult patients with "*cough variant asthma*" when severe coughing inhibits respiratory function (with or without audible wheezes)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- ❑ Same as adult
- ❑ Attempt to keep a child with suspected epiglottitis or partial airway obstruction calm so as to not worsen their condition.
- ❑ Allow child to stay in the parent's arms if desired.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Albuterol 2.5-7.5 mg (2.5 mg increments)** via nebulization for bronchospasm/wheezing until symptoms subside.
  - Patient respiratory status must be reassessed after each 2.5 mg to determine need for additional dosing.
- ❑ **Epinephrine (1:1000) 0.01 mg/kg (max dose of 0.3 mg)** SQ/IM for patient in extremis
  - **May repeat every 10 minutes to max total of 1.2 mg**
- ❑ **If STRIDOR (Croup) exists then give:**
  - **Epinephrine (1:1000) 2cc mixed with 3cc of Normal Saline via nebulizer.**

PARAMEDIC

OVERDOSE

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ **Charcoal 50 grams** by mouth for most ingestions, if the patient is alert, awake and gag reflex is intact.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Naloxone**
  - **0.4–2 mg (per dose)** IV/intranasal for suspected narcotic overdose. Titrate to affect, no maximum dose.
  - **0.8 mg IM (per dose)** Titrate to affect, no maximum dose. For suspected narcotic overdose when vascular access is unavailable
  - **ET administration may be considered in narcotic associated cardiac arrest**

PARAMEDIC

- ❑ Identify potential underlying causes.
- ❑ **Diphenhydramine (Benadryl)**
  - **50 mg** IV (preferred) or IM for patient with evidence of dystonic reaction
- ❑ **Sodium bicarbonate 1 mEq/kg** slow IV push for tricyclic antidepressant overdose with sustained HR >120 bpm, QRS >0.10, hypotension unresponsive to fluids, or ventricular dysrhythmias
- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

And/Or

- ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- ❑ **Charcoal 1g/kg up to 50 grams** by mouth for most ingestions, if the patient is alert, awake and gag reflex is intact.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Naloxone**
  - **0.1 mg/kg (per dose)** IV, IM, or intra nasal for suspected narcotic overdose. Titrate to affect, no maximum dose.
  - ET administration may be considered in narcotic associated cardiac arrest

PARAMEDIC

- ❑ Identify potential underlying causes.
- ❑ **Diphenhydramine (Benadryl) 1 mg/kg (max single dose of 50 mg)** IV (preferred) or IM for patient with evidence of dystonic reaction
- ❑ **Sodium bicarbonate 1 mEq/kg** slow IV push for tricyclic antidepressant overdose with sustained HR >120 bpm, QRS >0.10, hypotension unresponsive to fluids, or ventricular dysrhythmias
- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

OR

- ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

PAIN/ANXIETY MANAGEMENT

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles especially the patient comfort principles.
- ❑ Focused history and physical exam
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*

Pain Control

- ❑ **Morphine Sulfate 2–15 mg (2-4mg max increments)** IV/IM/SQ titrated to effect

OR

- ❑ **Fentanyl (Sublimaze) 25-200 micrograms (25-50mcg per dose)** IV/IM titrated to effect

Anxiety Control

- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**
  - SBP must be >100mmHg or peripheral pulses present to begin.
  - Dosage is cut in half if the patient has received narcotics or alcohol.
  - Dosage should be adjusted based on the size of the patient.
  - Maintain consciousness for those who are awake prior to treatment.
- **Intravenous.** Begin with 1-2mg and titrate by up to 2mg every 2 minutes to no more than 10mg maximum for an adult.
  - Allow 2 minutes between doses to see full effect before titrating further.
- **Intramuscular.** Give 2-5mg IM.
  - Only give IM if no vascular access is available.
- **Intranasal or oral.** Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose.
  - Preferred method of delivery is through a nasal atomizer.

Pain related to IO use

- **Lidocaine 40 mg** administered SLOWLY through attached pre-primed extension set prior to IO bolus or flush on alert patient

PARAMEDIC

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult

Pain Control

- ❑ **Morphine Sulfate 0.1-0.2 mg/kg** SC/IM/IV q2-4h; Max: 15 mg/dose

OR

- ❑ **Fentanyl (Sublimaze) 0.5 – 2 microgram/kg** IV/IM titrated to effect

Anxiety Control

- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**
  - SBP must be >70 + (age in years x 2) mmHg or peripheral pulses present to begin.
  - Maintain consciousness for those who are awake prior to treatment.
  - Dosage is cut in half if the patient has received narcotics or alcohol.
  - Dosage should be adjusted based on the size of the patient.
- **Intravenous.** Begin with 0.05 mg/kg and titrate up by 0.05mg/kg to a maximum of 0.4 mg/kg or 5mg, whichever is less.
  - Allow 2 minutes between doses to see full effect before titrating further.
- **Intramuscular.** Give 0.1-0.15mg/kg IM.
  - Only give IM if no vascular access is available.
- **Intranasal or oral.** Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose.
  - Preferred method of delivery is through a nasal atomizer.

PARAMEDIC

SEIZURES

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
  - Blood glucose assessment
  - Temperature assessment
  - As appropriate, determine possibility of pregnancy
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Ensure patients experiencing febrile seizures are not excessively dressed or bundled
  - Do not restrain, but provide protection during the tonic-clonic phase
  - Patients <12 months old with seizure activity. The parent(s) should be strongly urged to have the child transported by EMS and/or evaluated by a Physician.
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ Assist patient with their magnet stimulation device (Vagus Nerve Stimulator) once every 3-5 minutes, up to 3 times.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ Titrate medications to control seizures while keeping the SBP>100mm Hg or positive peripheral pulses
- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**

SBP must be >100mmHg or peripheral pulses present to begin. Dosage is cut in half if the patient has received narcotics or alcohol. Dosage should be adjusted based on the size of the patient. Maintain consciousness for those who are awake prior to treatment.

Intravenous. (IV/IO) Begin with 1-2mg and titrate by up to 2mg every 2 minutes to no more than 10mg maximum for an adult.

Allow 2 minutes between doses to see full effect before titrating further.

Intramuscular. Give 2-5mg IM. (Only give IM if no vascular access is available.)

Intranasal or oral. Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose. (Preferred method of delivery is through a nasal atomizer.)

- ❑ **Diazepam (Valium)** – May be used as an alternative. Follow the same safety parameters as with Midazolam.

  Intravenous – (IV/IO) 5-10mg IV q5-10 min. to 30mg Max.

PARAMEDIC

- ❑ **Magnesium Sulfate** - Give 4 grams IV/IM. (ONLY for Pregnant Females with Eclampsia.)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- ❑ Same as adult

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ Titrate medications to control seizures while keeping the SBP>70 + (age in years x 2) mmHg or peripheral pulses present.
- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**

SBP must be >70 + (age in years x 2) mmHg or peripheral pulses present to begin. Maintain consciousness for those who are awake prior to treatment. Dosage is cut in half if the patient has received narcotics or alcohol. Dosage should be adjusted based on the size of the patient.

Intravenous. Begin with 0.05 mg/kg and titrate up by 0.05mg/kg to a maximum of 0.4 mg/kg or 5mg, whichever is less. Allow 2 minutes between doses to see full effect before titrating further.

Intramuscular. Give 0.1-0.15mg/kg IM. (Only give IM if no vascular access is available.)

Intranasal or oral. Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose. Preferred method of delivery is through a nasal atomizer.

- ❑ **Diazepam (Valium)** – May be used as an alternative. Follow the same safety parameters as with Midazolam.

  Intravenous – (IV/IO) 0.1-0.3 mg/kg q5-10 min. to 10mg max. Do NOT exceed adult dosing.

PARAMEDIC

STROKE

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
  - Blood glucose assessment
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ Evaluate Cincinnati Stroke Scale criterion during assessment.

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
  - If possible, IV therapy should include no smaller than an 18 gauge catheter in the AC

PARAMEDIC

On-line medical consultation

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

PARAMEDIC

On-line medical consultation

SUBMERSION/DROWNING

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - Safely and appropriately remove patient from the water
- ❑ Focused history and physical exam
  - Body temperature assessment if conditions are such as to induce hypothermia
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Place patient supine
  - Remove wet clothing
  - Ensure patient warmth
  - The Scuba Divers "Dive Computer" or Dive Log Book should be transported with the patient
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT	PEDIATRIC (<37 kg or 80 lbs)
EMT- BASIC PROVIDER	**EMT- BASIC PROVIDER**
EMT- INTERMEDIATE PROVIDER	**EMT- INTERMEDIATE PROVIDER**
❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle* ❑ **Albuterol 2.5–7.5 mg (2.5 mg increments)** nebulized for bronchospasm/wheezing until symptoms subside. • Patient respiratory status must be reassessed after each 2.5 mg to determine need for additional dosing.	❑ Same as adult
PARAMEDIC	**PARAMEDIC**
❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)* **And/Or** ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)	❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg **OR** ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

TOXIC EXPOSURE- CARBON MONOXIDE

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - Safely and rapidly remove patient from source of exposure
  - Environmental CO levels if equipment is available
- ❑ Focused history and physical exam
  - Estimation of exposure time
  - Be cautious of pulse oximetry readings
- ❑ Develop and implement treatment plan based on, assessment findings, resources, and training
  - High flow oxygen immediately and continuously
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT	PEDIATRIC (<37 kg or 80 lbs)
EMT- BASIC PROVIDER	**EMT- BASIC PROVIDER**
EMT- INTERMEDIATE PROVIDER	**EMT- INTERMEDIATE PROVIDER**
❑ Advanced airway management, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*	❑ Same as adult
PARAMEDIC	**PARAMEDIC**
❑ Early notification to receiving ED of potential CO poisoning	❑ Early notification to receiving ED of potential CO poisoning
❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)* **And/Or** ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)	❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg **OR** ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

TOXIC EXPOSURE - CYANIDE

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - If properly trained and equipped, safely and rapidly remove patient from the source of exposure
  - Request HazMat response as appropriate
- ❑ Industries in which to consider Cyanide exposure
  - Electroplating
  - Metallurgy
  - Organic chemicals production
  - Photographic developing
  - Manufacture of plastics
  - Fumigation of ships
  - Some mining processes especially Gold
- ❑ How could you be exposed to Cyanide
  - Breathing air, drinking water, touching soil, or eating foods that contain cyanide.
  - Smoking cigarettes and breathing smoke-filled air during fires are major sources of cyanide exposure.
  - Breathing air near a hazardous waste site containing cyanide.
  - Eating foods naturally containing cyanide compounds, such as tapioca (made from cassava roots), lima beans, apricot seeds and almonds. However, the portions of these plants that are eaten in the United States contain relatively low amounts of cyanide.
- ❑ Focused history and physical exam
  - Be alert for exposure related
    - Acute dyspnea/tachypnea without cyanosis
    - Nausea/vomiting
    - Seizures
    - Hyper or hypotension
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - High flow oxygen immediately and continuously
  - Be cautious of pulse oximetry readings
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*

PARAMEDIC

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

And/Or

- ❑ **Epinephrine (1:1,000) 2–10 mcg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >100 mmHg**. (**Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult

PARAMEDIC

- ❑ **Dopamine 2-20 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

OR

- ❑ **Epinephrine (1:1,000) 0.1–1 mcg/kg/min** IV infusion per Chart in Appendix for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg. (Epinephrine is the preferred first line medication in anaphylaxis while Dopamine is the first line medication for hypotension due to other mechanisms.)

TOXIC EXPOSURE - HYDROFLUORIC ACID

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
- ❑ Focused history and physical exam
- ❑ Industrial Exposures in which to consider Hydrofluoric Acid
  - Aluminum Processing
  - Chemical Plants
  - Construction – Waste Products
  - Creation of Chlorofluorohydrocarbons for refrigerants, aerosols, foams, plastics, and specialty solvents
  - Dry Cleaning Spotting Solutions
  - Electroplating
  - Foundry Cast Sand Removal
  - Glass Etching or Cleaning
  - Meat Packing Industry
  - Petroleum Refineries for high octane gasoline
  - Semiconductor Silicon Etching or Cleaning
  - Stainless Steel "Pickling"
  - Stone Etching or Polishing
  - Uranium Processing
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Skin Exposure
    - Immediate irrigation. Clothing, jewelry etc., is removed as irrigation is taking place.
    - Soak burned skin in magnesium hydroxide antacid preparations (milk of magnesia, Mylanta, Maalox).
  - Eye Exposure
    - Continuous rinsing for a minimum of 15 minutes or until a calcium ocular solution is available.
  - Ingestion – Conscious/Alert Patient Only
    - If patient is able to swallow, administer high amounts of any calcium or magnesium based antacid (milk of magnesia, Mylanta, Maalox). In the absence of these products, have patient drink approximately 8-16 oz. of water
- ❑ Continuous ECG, CO_2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*

PARAMEDIC

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult

PARAMEDIC

TOXIC EXPOSURE - ORGANOPHOSPHATES/NERVE AGENTS

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - If properly trained and equipped, safely and rapidly remove patient from the source of exposure
  - Request HazMat response as appropriate
  - Be aware of Exposure Level
    - Mild - Miosis only or no symptoms
    - Moderate – Other "S.L.U.D.G.E." symptoms
    - Severe – Unconcious, seizing, flaccid or apneic
- ❑ Focused history and physical exam. Be alert for "S.L.U.D.G.E." presentation – Salivation, Lacrimation, Urination, Defecation, Gastrointestinal cramping and Emesis.
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Immediate irrigation.
  - Clothing, jewelry etc., is removed as irrigation is taking place
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Advanced airway, vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Mark 1 Kits may be used instead of the individual drugs as described above and if available.**
  - Mild Exposure with no symptoms may require no treatment
  - Moderate Exposure with evidence of SLUDGE give 1-2 Mark 1 Kits
  - Severe Exposure with respiratory distress and SLUDGE give 3 Mark 1 Kits

PARAMEDIC

- ❑ **Atropine sulfate 2 mg (Mark I Kits contain 2mg of Atropine in each autoinjector)** rapid IV (preferred) or IM repeated every 15 minutes until atropinized.

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult
  - **Mark 1 Kit's safety has not been established in ages less than 9 years old. Mark 1 Kits may not be given in children weighing at least 40kg or 88 pounds.**

PARAMEDIC

- ❑ **Atropine sulfate 0.05 mg/kg** rapid IV (preferred) or IM repeated every 15 minutes until atropinized (Each Mark 1 kits contains Atropine 2mg in an Atropen)

VIOLENT PATIENT / CHEMICAL SEDATION

ALL PROVIDERS

- ❑ Scene and patient management per Core Principles
  - Tasered patient- Prior to touching any patient that has been subdued using a Taser, ensure law enforcement has disconnected the wires from the hand held unit.
- ❑ Focused history and physical exam
  - Blood glucose assessment
  - Tasered patient- Determine the patient's condition prior to and after Taser discharge
- ❑ Develop and implement treatment plan based on assessment findings, resources, and training
  - Tasered patient
    - Removal of Taser probe by System Providers
      - Credentialed Providers may remove probes that are not embedded in the face, neck, groin, breast, or spinal area
      - To remove probes
        - Place one hand on the patient in the area where the probe is embedded and stabilize the skin surrounding the puncture site. Place other hand firmly around the probe.
        - In one fluid motion pull the probe straight out from the puncture site
        - Repeat procedure with second probe
    - The following patients should be transported to an Emergency Department for evaluation
      - Patient with probes embedded in the face, neck, groin, breast, or spinal area
      - Patient with significant cardiac history
      - Patient having ingested stimulants such as Phencyclidine/PCP, cocaine, etc.
      - Patients exhibiting bizarre behavior or with persistently elevated vital signs
  - Pepper Spray exposure
    - Ocular irrigation, medial to lateral, with copious amounts of water
- ❑ Continuous ECG, CO_2, and Pulse Oximetry monitoring when available

ADULT

EMT- BASIC PROVIDER

- ❑ Attempt to calm or gently restrain the patient.

EMT- INTERMEDIATE PROVIDER

- ❑ Vascular access and fluid therapy per *Resuscitation and Perfusion Core Principle*
- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**
  - SBP must be >100mmHg or peripheral pulses present to begin.
  - Dosage is cut in half if the patient has received narcotics or alcohol.
  - Dosage should be adjusted based on the size of the patient.
  - Maintain consciousness for those who are awake prior to treatment.
- **Intravenous.** Begin with 1-2mg and titrate by up to 2mg every 2 minutes to no more than 10mg maximum for an adult.
  - Allow 2 minutes between doses to see full effect before titrating further.
- **Intramuscular.** Give 2-5mg IM.
  - Only give IM if no vascular access is available.
- **Intranasal or oral.** Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose.
  - Preferred method of delivery is through a nasal atomizer.

PARAMEDIC

Haloperidol (Haldol) 5-10mg IM or 2-5 mg IV

Haloperidol (Haldol) Repeat dosing as needed

PEDIATRIC (<37 kg or 80 lbs)

EMT- BASIC PROVIDER

- ❑ Same as Adult

EMT- INTERMEDIATE PROVIDER

- ❑ Same as adult
- ❑ **Midazolam (Versed) Call OLMC for additional dosing if necessary.**
  - SBP must be >70 + (age in years x 2) mmHg or peripheral pulses present to begin.
  - Maintain consciousness for those who are awake prior to treatment.
  - Dosage is cut in half if the patient has received narcotics or alcohol.
  - Dosage should be adjusted based on the size of the patient.
- **Intravenous.** Begin with 0.05 mg/kg and titrate up by 0.05mg/kg to a maximum of 0.4 mg/kg or 5mg, whichever is less.
  - Allow 2 minutes between doses to see full effect before titrating further.
- **Intramuscular.** Give 0.1-0.15mg/kg IM.
  - Only give IM if no vascular access is available.
- **Intranasal or oral.** Give 0.25 to 0.5 mg/kg to a maximum of 20mg as a one-time dose.
  - Preferred method of delivery is through a nasal atomizer.

PARAMEDIC